



Ms. Kasey Ashley  
NCRWQCB  
5550 Skylane Blvd, Ste A  
Santa Rosa, CA 95403

August 8, 2006

**Soil Stockpile Leachability Study (McKinleyville Site)**  
Beaver Lumber Company (former)  
1220 Fifth Street  
Arcata, California  
**Case No. 1NHU001**

Dear Ms. Ashley,

This report presents the results of the soil leachability study performed on the soil stockpiles located at Grange Ave, McKinleyville, Humboldt County, California (site) (Figure 2), and was prepared for Mr. Bradford C. Floyd by Blue Rock Environmental, Inc. (Blue Rock).

The leachability study was approved by the North Coast Regional Water Quality Control Board (NCRWQCB) letter dated July 18, 2006.

A detailed background of site conditions can be found in Blue Rock's *Closure Summary* dated April 7, 2006.

### **Soil Leachability Study**

#### Purpose

The purpose of the study is to evaluate potential for leaching of motor oil contaminants detected in the Beaver Lumber soil currently stockpiled at the site. Previous soil sampling efforts determined that motor oil contaminant concentrations in the stockpiled soil range from 73 to 910 mg/kg (Figure 1). Blue Rock performed the leachability study by sampling 10 percent of the previous locations sampled on Figure 1.

#### Soil Sampling Activities

Discrete soil samples were collected at a depth of approximately 3 to 4 feet into the stockpiled soil using a clean shovel at nine locations shown in Figure 2.

Soil samples were then collected in appropriate containers, labeled, documented on a chain-of-custody form, and placed on ice in a cooler for transport to the project laboratory.



A California DHS-certified laboratory analyzed the soil samples for the following:

- TPHmo using EPA Method 3550/8015M (with silica-gel clean-up)
- California Waste Extraction Test (WET/DI) (neutral pH)
- TPHmo using EPA Method 3510/8015M (with silica-gel clean-up) on the WET/DI extractant

Between sampling locations, excavating tools and sampling devices were cleaned in an Alconox® wash followed by double rinse in clean tap water to prevent cross-contamination.

#### Soil Leachability Results

All soil samples were successfully sent under chain-of-custody to the project laboratory. TPHmo concentrations were detected in the soil samples ranging from 130 to 600 mg/kg. Each sample was subjected to a Waste Extraction Test using deionized water. The WET(DI) extractant from each sample was analyzed for TPHmo with silica gel cleanup. All extractants analyzed were below the water quality cleanup goal of 175 µg/L, and all but one were below the method detection limit of 100 µg/L. Soil sample S3-3-L contained 150 mg/kg TPHmo and its extractant contained 120 µg/L TPHmo, which would not appear pose a threat to water quality.

Soil sample analytical results are listed in Tables 1 & 2, and displayed in Figures 1 & 2. Kiff analytical reports are attached.

#### Recommendations

Blue Rock recommends the responsible party explore onsite disposal (reuse) options for the future disposition of the stockpiled soil.



## Certification

This report was prepared under the supervision of a California Professional Geologist at Blue Rock. All statements, conclusions, and recommendations are based upon published results from past consultants, field observations by Blue Rock, and analyses performed by a state-certified laboratory as they relate to the time, location, and depth of points sampled by Blue Rock. Interpretation of data, including spatial distribution and temporal trends, are based on commonly used geologic and scientific principles. It is possible that interpretations, conclusions, and recommendations presented in this report may change, as additional data become available and/or regulations change.

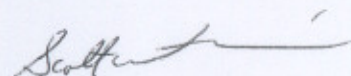
Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

The service performed by Blue Rock has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

If you have any questions regarding this project, please contact us at (707) 441-1934.

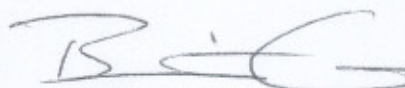
Sincerely,  
Blue Rock Environmental, Inc.

Prepared by:

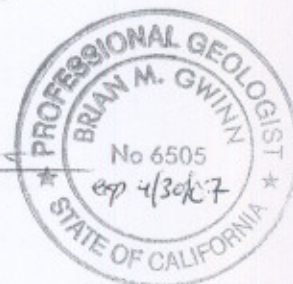


Scott Ferriman  
Project Scientist

Reviewed by:



Brian Gwinn, PG  
Principal Geologist



Attachments:

Table 1: Soil Stockpile Analytical Results

Table 2: Soil Stockpile Analytical Results (Metals)

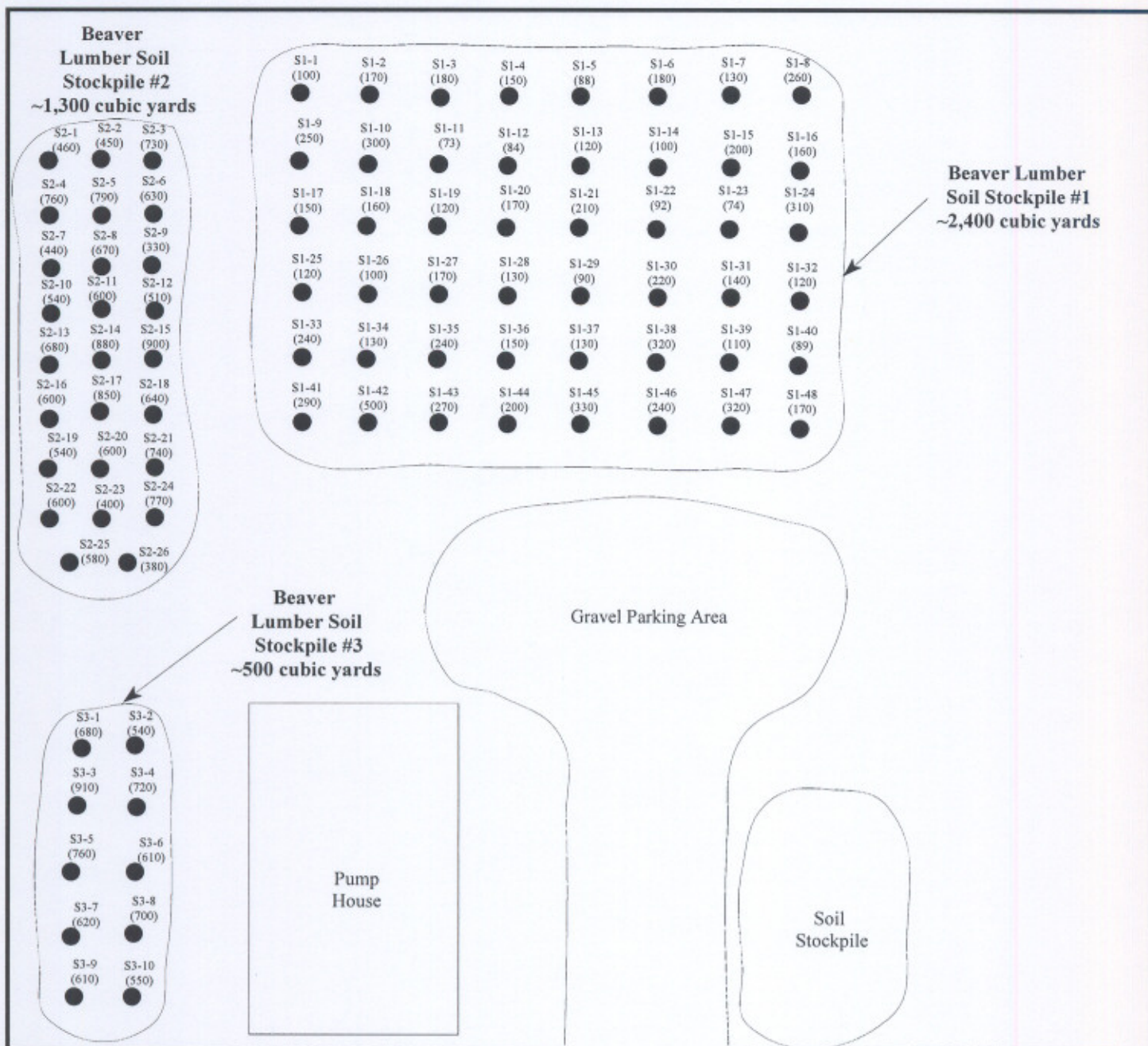
Figure 1: TPHmo Distribution Map

Figure 2: Soil Leachability Study Map

Distribution:

Mr. Bradford C. Floyd  
819 Seventh Street  
Eureka, CA 95501





**TPHmo Distribution Map**  
Soil Stockpiles from Beaver Lumber Site  
Grange Avenue  
McKinleyville, California

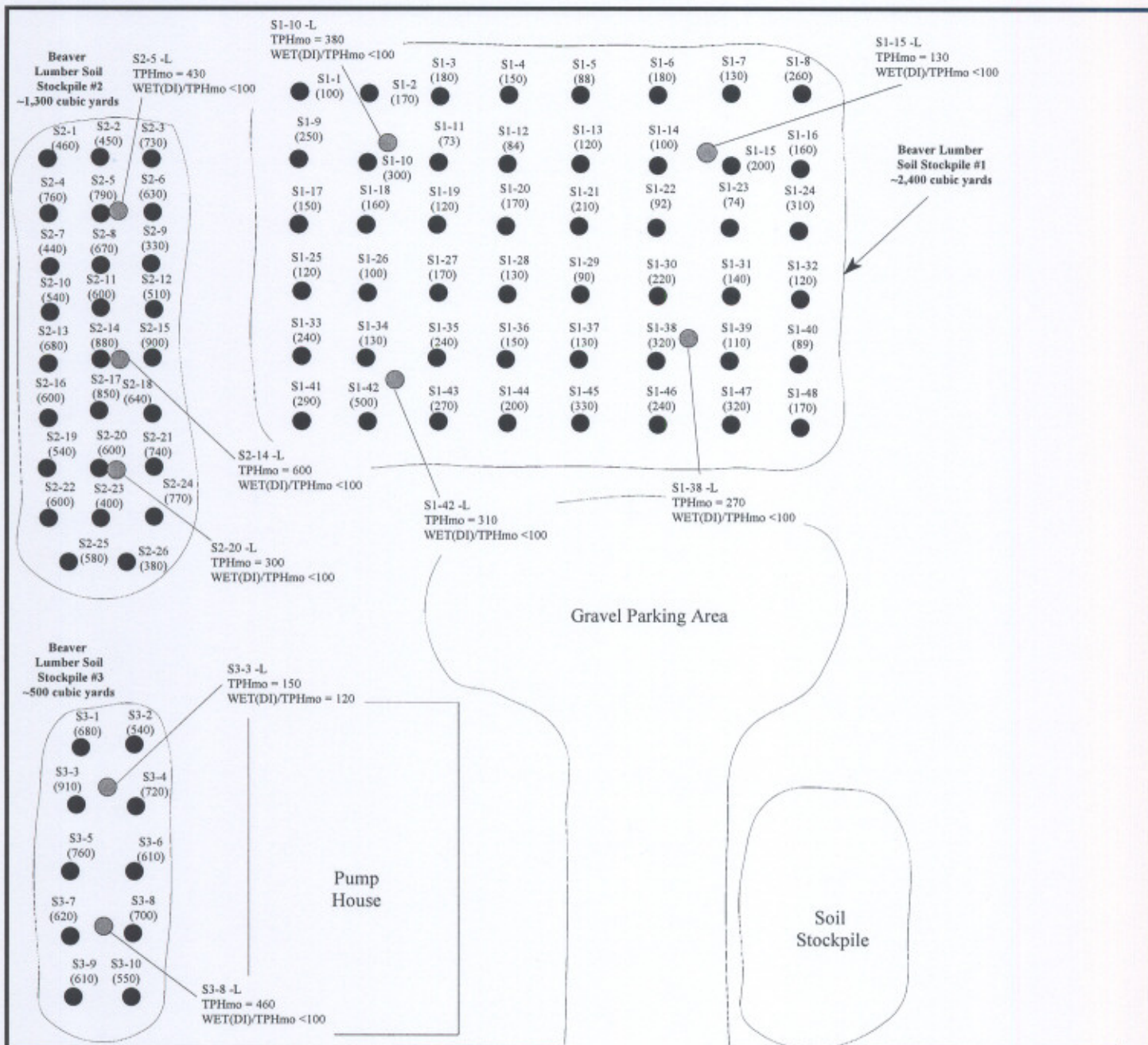
 **BLUE ROCK**  
ENVIRONMENTAL, INC.

Project No.  
NC-1

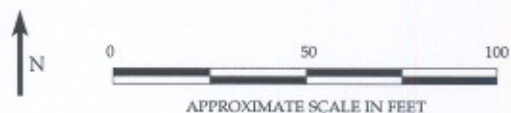
Report Date  
8/06

Figure  
1





- EXPLANATION**
- Soil sample locations with TPHmo results in mg/kg (collected 11/11/05).
- Soil sample locations with TPHmo results in mg/kg and WET(DI)/TPHmo results in µg/L (7/26/06).



**Soil Leachability Study Map**  
Soil Stockpiles from Beaver Lumber Site  
Grange Avenue  
McKinleyville, California

**BLUE ROCK**  
ENVIRONMENTAL, INC.

Project No.  
NC-1

Report Date  
8/06

Figure  
2



**Table 1**  
**SOIL STOCKPILE ANALYTICAL RESULTS**  
Former Beaver Lumber Company  
1220 Fifth St., Arcata, California  
Blue Rock Project No. NC-1

Sample ID	Sample Description	Sample Date	O and G (mg/kg)	TPHmo (mg/kg)	TPHmo* (mg/kg)	TPHd (mg/kg)	TPHd* (mg/kg)	TPHg (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	PCP (mg/kg)	TCP (mg/kg)	WET(DI)/TPHmo (µg/L)
1	sand, gravel, silty clay	9/22/98	--	--	--	<1	--	--	--	--	--	--	--	--	--	--
2	sand, gravel, silty clay	9/22/98	--	--	--	3.2	--	--	--	--	--	--	--	--	--	--
3	sand, gravel, silty clay	9/22/98	180	--	--	5.5	--	--	--	--	--	--	--	<1	<1	--
4	sand, gravel, silty clay	9/22/98	--	--	--	3.7	--	--	--	--	--	--	--	--	--	--
5	sand, gravel, silty clay	10/13/98	--	63	47	6.7	4.7	<1	<0.005	0.012	<0.005	<0.01	<0.05	<1	<1	--
6	sand, gravel, silty clay	10/13/98	--	110	71	16	12	<1	<0.005	0.025	<0.005	<0.01	<0.05	--	--	--
7	sand, gravel, clay, woodwaste	10/13/98	--	710	600	27	26	<1	<0.005	0.02	<0.005	<0.01	<0.05	<1	<1	--
8	sand, gravel, silty clay	10/13/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9	sand, gravel, silty clay	10/13/98	--	53	50	5.2	4.6	<1	<0.005	0.0087	<0.005	<0.01	<0.05	<1	<1	--
10	silty clay	10/13/98	--	14	13	<1	<1	<1	<0.005	<0.005	<0.005	<0.01	<0.05	<1	<1	--
#1	sand, gravel, silty clay	8/21/00	--	100	--	5.7	--	--	--	--	--	--	--	--	--	--
#2	sand, gravel, silty clay	8/21/00	--	390	--	21	--	--	--	--	--	--	--	--	--	--
S1-1	sand, gravel, silty clay	11/11/05	--	--	100	--	52	--	--	--	--	--	--	--	--	--
S1-2	sand, gravel, silty clay	11/11/05	--	--	170	--	43	--	--	--	--	--	--	--	--	--
S1-3	sand, gravel, silty clay	11/11/05	--	--	180	--	84	--	--	--	--	--	--	--	--	--
S1-4	sand, gravel, silty clay	11/11/05	--	--	150	--	64	--	--	--	--	--	--	--	--	--
S1-5	sand, gravel, silty clay	11/11/05	--	--	88	--	52	--	--	--	--	--	--	--	--	--
S1-6	sand, gravel, silty clay	11/11/05	--	--	180	--	72	--	--	--	--	--	--	--	--	--
S1-7	sand, gravel, silty clay	11/11/05	--	--	130	--	60	--	--	--	--	--	--	--	--	--
S1-8	sand, gravel, silty clay	11/11/05	--	--	260	--	67	--	--	--	--	--	--	--	--	--
S1-9	sand, gravel, silty clay	11/11/05	--	--	250	--	110	--	--	--	--	--	--	--	--	--
S1-10	sand, gravel, silty clay	11/11/05	--	--	300	--	140	--	--	--	--	--	--	--	<1	--
S1-11	sand, gravel, silty clay	11/11/05	--	--	73	--	41	--	--	--	--	--	--	--	--	--
S1-12	sand, gravel, silty clay	11/11/05	--	--	84	--	46	--	--	--	--	--	--	--	--	--
S1-13	sand, gravel, silty clay	11/11/05	--	--	120	--	55	--	--	--	--	--	--	--	--	--
S1-14	sand, gravel, silty clay	11/11/05	--	--	100	--	30	--	--	--	--	--	--	--	--	--
S1-15	sand, gravel, silty clay	11/11/05	--	--	200	--	47	--	--	--	--	--	--	--	<1	--
S1-16	sand, gravel, silty clay	11/11/05	--	--	160	--	68	--	--	--	--	--	--	--	--	--
S1-17	sand, gravel, silty clay	11/11/05	--	--	150	--	64	--	--	--	--	--	--	--	--	--
S1-18	sand, gravel, silty clay	11/11/05	--	--	160	--	38	--	--	--	--	--	--	--	--	--
S1-19	sand, gravel, silty clay	11/11/05	--	--	120	--	33	--	--	--	--	--	--	--	--	--
S1-20	sand, gravel, silty clay	11/11/05	--	--	170	--	73	--	--	--	--	--	--	--	--	--
S1-21	sand, gravel, silty clay	11/11/05	--	--	210	--	54	--	--	--	--	--	--	--	<1	--
S1-22	sand, gravel, silty clay	11/11/05	--	--	92	--	28	--	--	--	--	--	--	--	--	--
S1-23	sand, gravel, silty clay	11/11/05	--	--	74	--	38	--	--	--	--	--	--	--	--	--
S1-24	sand, gravel, silty clay	11/11/05	--	--	310	--	63	--	--	--	--	--	--	--	--	--

**Table 1**  
**SOIL STOCKPILE ANALYTICAL RESULTS**  
Former Beaver Lumber Company  
1220 Fifth St., Arcata, California  
Blue Rock Project No. NC-1

Sample ID	Sample Description	Sample Date	O and G (mg/kg)	TPHmo (mg/kg)	TPHmo* (mg/kg)	TPHd (mg/kg)	TPHd* (mg/kg)	TPHg (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	PCP (mg/kg)	TCP (mg/kg)	WET(DI)/TPHmo (µg/L)
S1-25	sand, gravel, silty clay	11/11/05	--	--	120	--	51	--	--	--	--	--	--	--	--	--
S1-26	sand, gravel, silty clay	11/11/05	--	--	100	--	50	--	--	--	--	--	--	--	--	--
S1-27	sand, gravel, silty clay	11/11/05	--	--	170	--	44	--	--	--	--	--	--	--	--	--
S1-28	sand, gravel, silty clay	11/11/05	--	--	130	--	57	--	--	--	--	--	--	--	--	--
S1-29	sand, gravel, silty clay	11/11/05	--	--	90	--	63	--	--	--	--	--	--	--	--	--
S1-30	sand, gravel, silty clay	11/11/05	--	--	220	--	51	--	--	--	--	--	--	--	--	--
S1-31	sand, gravel, silty clay	11/11/05	--	--	140	--	60	--	--	--	--	--	--	--	--	--
S1-32	sand, gravel, silty clay	11/11/05	--	--	120	--	34	--	--	--	--	--	--	--	--	--
S1-33	sand, gravel, silty clay	11/11/05	--	--	240	--	100	--	--	--	--	--	--	--	--	--
S1-34	sand, gravel, silty clay	11/11/05	--	--	130	--	60	--	--	--	--	--	--	--	<1	--
S1-35	sand, gravel, silty clay	11/11/05	--	--	240	--	97	--	--	--	--	--	--	--	--	--
S1-36	sand, gravel, silty clay	11/11/05	--	--	150	--	38	--	--	--	--	--	--	--	--	--
S1-37	sand, gravel, silty clay	11/11/05	--	--	130	--	71	--	--	--	--	--	--	--	--	--
S1-38	sand, gravel, silty clay	11/11/05	--	--	320	--	140	--	--	--	--	--	--	--	--	--
S1-39	sand, gravel, silty clay	11/11/05	--	--	110	--	58	--	--	--	--	--	--	--	<1	--
S1-40	sand, gravel, silty clay	11/11/05	--	--	89	--	42	--	--	--	--	--	--	--	--	--
S1-41	sand, gravel, silty clay	11/11/05	--	--	290	--	110	--	--	--	--	--	--	--	--	--
S1-42	sand, gravel, silty clay	11/11/05	--	--	500	--	100	--	--	--	--	--	--	--	--	--
S1-43	sand, gravel, silty clay	11/11/05	--	--	270	--	53	--	--	--	--	--	--	--	--	--
S1-44	sand, gravel, silty clay	11/11/05	--	--	200	--	76	--	--	--	--	--	--	--	--	--
S1-45	sand, gravel, silty clay	11/11/05	--	--	330	--	96	--	--	--	--	--	--	--	--	--
S1-46	sand, gravel, silty clay	11/11/05	--	--	240	--	72	--	--	--	--	--	--	--	--	--
S1-47	sand, gravel, silty clay	11/11/05	--	--	320	--	98	--	--	--	--	--	--	--	--	--
S1-48	sand, gravel, silty clay	11/11/05	--	--	170	--	44	--	--	--	--	--	--	--	--	--
S2-1	sand, gravel, silty clay	11/11/05	--	--	460	--	180	--	--	--	--	--	--	--	--	--
S2-2	sand, gravel, silty clay	11/11/05	--	--	450	--	180	--	--	--	--	--	--	--	--	--
S2-3	sand, gravel, silty clay	11/11/05	--	--	730	--	310	--	--	--	--	--	--	--	--	--
S2-4	sand, gravel, silty clay	11/11/05	--	--	760	--	280	--	--	--	--	--	--	--	--	--
S2-5	sand, gravel, silty clay	11/11/05	--	--	790	--	290	--	--	--	--	--	--	--	--	--
S2-6	sand, gravel, silty clay	11/11/05	--	--	630	--	260	--	--	--	--	--	--	--	--	--
S2-7	sand, gravel, silty clay	11/11/05	--	--	440	--	170	--	--	--	--	--	--	--	--	--
S2-8	sand, gravel, silty clay	11/11/05	--	--	670	--	280	--	--	--	--	--	--	--	<1	--
S2-9	sand, gravel, silty clay	11/11/05	--	--	330	--	140	--	--	--	--	--	--	--	--	--
S2-10	sand, gravel, silty clay	11/11/05	--	--	540	--	210	--	--	--	--	--	--	--	--	--
S2-11	sand, gravel, silty clay	11/11/05	--	--	600	--	240	--	--	--	--	--	--	--	--	--
S2-12	sand, gravel, silty clay	11/11/05	--	--	510	--	98	--	--	--	--	--	--	--	--	--
S2-13	sand, gravel, silty clay	11/11/05	--	--	680	--	150	--	--	--	--	--	--	--	--	--
S2-14	sand, gravel, silty clay	11/11/05	--	--	880	--	260	--	--	--	--	--	--	--	--	--



**Table 1**  
**SOIL STOCKPILE ANALYTICAL RESULTS**  
Former Beaver Lumber Company  
1220 Fifth St., Arcata, California  
Blue Rock Project No. NC-1

Sample ID	Sample Description	Sample Date	O and G (mg/kg)	TPHmo (mg/kg)	TPHmo* (mg/kg)	TPHd (mg/kg)	TPHd* (mg/kg)	TPHg (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	PCP (mg/kg)	TCP (mg/kg)	WET(DI)/TPHmo (µg/L)
S2-15	sand, gravel, silty clay	11/11/05	--	--	900	--	190	--	--	--	--	--	--	--	--	--
S2-16	sand, gravel, silty clay	11/11/05	--	--	600	--	240	--	--	--	--	--	--	--	--	--
S2-17	sand, gravel, silty clay	11/11/05	--	--	850	--	290	--	--	--	--	--	--	--	--	--
S2-18	sand, gravel, silty clay	11/11/05	--	--	640	--	250	--	--	--	--	--	--	--	--	--
S2-19	sand, gravel, silty clay	11/11/05	--	--	540	--	210	--	--	--	--	--	--	--	--	--
S2-20	sand, gravel, silty clay	11/11/05	--	--	600	--	250	--	--	--	--	--	--	--	<1	--
S2-21	sand, gravel, silty clay	11/11/05	--	--	740	--	140	--	--	--	--	--	--	--	--	--
S2-22	sand, gravel, silty clay	11/11/05	--	--	600	--	200	--	--	--	--	--	--	--	--	--
S2-23	sand, gravel, silty clay	11/11/05	--	--	400	--	160	--	--	--	--	--	--	--	--	--
S2-24	sand, gravel, silty clay	11/11/05	--	--	770	--	300	--	--	--	--	--	--	--	--	--
S2-25	sand, gravel, silty clay	11/11/05	--	--	580	--	210	--	--	--	--	--	--	--	--	--
S2-26	sand, gravel, silty clay	11/11/05	--	--	380	--	200	--	--	--	--	--	--	--	--	--
S3-1	sand, gravel, silty clay	11/11/05	--	--	680	--	250	--	--	--	--	--	--	--	--	--
S3-2	sand, gravel, silty clay	11/11/05	--	--	540	--	190	--	--	--	--	--	--	--	--	--
S3-3	sand, gravel, silty clay	11/11/05	--	--	910	--	330	--	--	--	--	--	--	--	--	--
S3-4	sand, gravel, silty clay	11/11/05	--	--	720	--	270	--	--	--	--	--	--	--	--	--
S3-5	sand, gravel, silty clay	11/11/05	--	--	760	--	290	--	--	--	--	--	--	--	--	--
S3-6	sand, gravel, silty clay	11/11/05	--	--	610	--	220	--	--	--	--	--	--	--	<1	--
S3-7	sand, gravel, silty clay	11/11/05	--	--	620	--	220	--	--	--	--	--	--	--	--	--
S3-8	sand, gravel, silty clay	11/11/05	--	--	700	--	240	--	--	--	--	--	--	--	--	--
S3-9	sand, gravel, silty clay	11/11/05	--	--	610	--	200	--	--	--	--	--	--	--	--	--
S3-10	sand, gravel, silty clay	11/11/05	--	--	550	--	210	--	--	--	--	--	--	--	--	--



**Table 1**  
**SOIL STOCKPILE ANALYTICAL RESULTS**  
Former Beaver Lumber Company  
1220 Fifth St., Arcata, California  
Blue Rock Project No. NC-1

Sample ID	Sample Description	Sample Date	O and G (mg/kg)	TPHmo (mg/kg)	TPHmo* (mg/kg)	TPHd (mg/kg)	TPHd* (mg/kg)	TPHg (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	PCP (mg/kg)	TCP (mg/kg)	WET(DI)/TPHmo (µg/L)
<i>Soil Leachability Samples</i>																
S1-10-L	sand, gravel, silty clay	7/26/06	--	--	380	--	--	--	--	--	--	--	--	--	--	<100
S1-15-L	sand, gravel, silty clay	7/26/06	--	--	130	--	--	--	--	--	--	--	--	--	--	<100
S1-38-L	sand, gravel, silty clay	7/26/06	--	--	270	--	--	--	--	--	--	--	--	--	--	<100
S1-42-L	sand, gravel, silty clay	7/26/06	--	--	310	--	--	--	--	--	--	--	--	--	--	<100
S2-5-L	sand, gravel, silty clay	7/26/06	--	--	430	--	--	--	--	--	--	--	--	--	--	<100
S2-14-L	sand, gravel, silty clay	7/26/06	--	--	600	--	--	--	--	--	--	--	--	--	--	<100
S2-20-L	sand, gravel, silty clay	7/26/06	--	--	300	--	--	--	--	--	--	--	--	--	--	<100
S3-3-L	sand, gravel, silty clay	7/26/06	--	--	150	--	--	--	--	--	--	--	--	--	--	120
S3-8-L	sand, gravel, silty clay	7/26/06	--	--	460	--	--	--	--	--	--	--	--	--	--	<100

**Notes**

mg/kg = milligrams per kilogram

<###: Not detected above the method detection limit as shown

O and G: Total hydrocarbon oil and grease by Standard Method 5520 EF

TPHmo: Total petroleum hydrocarbons as motor oil by EPA Method 3550/8015M

TPHmo\*: Total petroleum hydrocarbons as motor oil with silica gel cleanup by EPA Method 3550/8015M

TPHd: Total petroleum hydrocarbons as diesel by EPA Method 3550/8015M

TPHd\*: Total petroleum hydrocarbons as diesel with silica gel cleanup by EPA Method 3550/8015M

TPHg: Total petroleum hydrocarbons as gasoline by EPA Method 5030/8015M

BTEX: Benzene, toluene, ethylbenzene, total xylenes by EPA Method 8020

MTBE: Methyl tertiary butyl ether by EPA 8020

PCP: Pentachlorophenol by Canadian pulp method

TCP: Tetrachlorophenol by Canadian Pulp Method

WET(DI)/TPHmo\*: Waste Extraction Test using deionized water as an extractant. The extractant was analyzed for Total petroleum hydrocarbons as motor oil with silica gel cleanup by EPA Method 3510/8015M

"--" Not analyzed, available or applicable



**Table 2**  
**SOIL STOCKPILE ANALYTICAL RESULTS (METALS)**  
Former Beaver Lumber Company  
1220 Fifth St., Arcata, California  
Blue Rock Project No. NC-1

Sample ID	Sample Description	Sample Date	Sb (mg/kg)	As (mg/kg)	Ba (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Cu (mg/kg)	Pb (mg/kg)	Hg (mg/kg)	Mo (mg/kg)	Ni (mg/kg)	Se (mg/kg)	Ag (mg/kg)	Tl (mg/kg)	V (mg/kg)	Zn (mg/kg)
1	sand, gravel, silty clay	9/22/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	sand, gravel, silty clay	9/22/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	sand, gravel, silty clay	9/22/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	sand, gravel, silty clay	9/22/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	sand, gravel, silty clay	10/13/98	ND	ND	140	ND	ND	62	11	24	ND	ND	ND	66	ND	ND	ND	39	63
6	sand, gravel, silty clay	10/13/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7	sand, gravel, clay, woodwaste	10/13/98	ND	ND	170	ND	ND	42	ND	25	ND	ND	ND	50	ND	ND	ND	35	54
8	sand, gravel, silty clay	10/13/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9	sand, gravel, silty clay	10/13/98	ND	ND	120	ND	ND	57	11	22	ND	ND	ND	69	ND	ND	ND	37	65
10	silty clay	10/13/98	ND	ND	170	ND	ND	79	14	27	ND	ND	ND	92	ND	ND	ND	42	71

Notes

mg/kg = milligrams per kilogram

ND: Not detected above the method detection limit

Sb: Antimony by EPA Method 7000 series

As: Arsenic by EPA Method 7000 series

Ba: Barium by EPA Method 7000 series

Be: Beryllium by EPA Method 7000 series

Cd: Cadmium by EPA Method 7000 series

Cr: Total Chromium by EPA Method 7000 series

Co: Cobalt by EPA Method 7000 series

Cu: Copper by EPA Method 7000 series

Pb: Lead by EPA Method 7000 series

Hg: Mercury by EPA Method 7000 series

Mo: Molybdenum by EPA Method 7000 series

Ni: Nickel by EPA Method 7000 series

Se: Selenium by EPA Method 7000 series

Ag: Silver by EPA Method 7000 series

Tl: Thallium by EPA Method 7000 series

V: Vanadium by EPA Method 7000 series

Zn: Zinc by EPA Method 7000 series





Report Number : 51299

Date : 08/03/2006

Scott Ferriman  
Blue Rock Environmental, Inc.  
535 3rd Street, Suite 100  
Eureka, CA 95501

Subject : 9 Soil Samples and 10 Liquid Samples  
Project Name : Beaver Lumber Soil Stockpile  
Project Number : NC-1

Dear Mr. Ferriman,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel Kiff". The signature is stylized with a large, looped initial 'J' and a trailing flourish.

Joel Kiff



Report Number : 51299

Date : 08/03/2006

Subject : 9 Soil Samples and 10 Liquid Samples  
Project Name : Beaver Lumber Soil Stockpile  
Project Number : NC-1

## Case Narrative

The liquid samples are Waste Extraction Test (WET) extracts of the soil samples. The WET was performed using deionized water as the extractant. The WET procedure was performed by Calscience Environmental Labs and the analysis of the extracts was performed by Kiff Analytical.

Approved By: \_\_\_\_\_

  
Joel Kiff





Report Number : 51299

Date : 08/03/2006

Project Name : **Beaver Lumber Soil Stockpile**

Project Number : **NC-1**

Sample : **S1-10-L**

Matrix : Soil

Lab Number : 51299-01

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (Silica Gel)	380	40	mg/Kg	M EPA 8015	08/02/2006
1-Chlorooctadecane (Silica Gel Surr)	80.2		% Recovery	M EPA 8015	08/02/2006

Sample : **S1-15-L**

Matrix : Soil

Lab Number : 51299-02

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (Silica Gel)	130	20	mg/Kg	M EPA 8015	08/02/2006
1-Chlorooctadecane (Silica Gel Surr)	72.4		% Recovery	M EPA 8015	08/02/2006

Sample : **S1-38-L**

Matrix : Soil

Lab Number : 51299-03

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (Silica Gel)	270	40	mg/Kg	M EPA 8015	08/02/2006
1-Chlorooctadecane (Silica Gel Surr)	80.2		% Recovery	M EPA 8015	08/02/2006

Approved By:

Jcel Kiff



Report Number : 51299

Date : 08/03/2006

Project Name : **Beaver Lumber Soil Stockpile**

Project Number : **NC-1**

Sample : **S1-42-L**

Matrix : Soil

Lab Number : 51299-04

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (Silica Gel)	310	40	mg/Kg	M EPA 8015	08/02/2006
1-Chlorooctadecane (Silica Gel Surr)	79.6		% Recovery	M EPA 8015	08/02/2006

Sample : **S2-5-L**

Matrix : Soil

Lab Number : 51299-05

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (Silica Gel)	430	40	mg/Kg	M EPA 8015	08/02/2006
1-Chlorooctadecane (Silica Gel Surr)	79.8		% Recovery	M EPA 8015	08/02/2006

Sample : **S2-14-L**

Matrix : Soil

Lab Number : 51299-06

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (Silica Gel)	600	40	mg/Kg	M EPA 8015	08/02/2006
1-Chlorooctadecane (Silica Gel Surr)	71.0		% Recovery	M EPA 8015	08/02/2006

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Project Name : **Beaver Lumber Soil Stockpile**

Project Number : **NC-1**

Sample : **S2-20-L**

Matrix : Soil

Lab Number : 51299-07

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (Silica Gel)	300	30	mg/Kg	M EPA 8015	08/02/2006
1-Chlorooctadecane (Silica Gel Surr)	92.8		% Recovery	M EPA 8015	08/02/2006

Sample : **S3-3-L**

Matrix : Soil

Lab Number : 51299-08

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (Silica Gel)	150	40	mg/Kg	M EPA 8015	08/02/2006
1-Chlorooctadecane (Silica Gel Surr)	76.4		% Recovery	M EPA 8015	08/02/2006

Sample : **S3-8-L**

Matrix : Soil

Lab Number : 51299-09

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (Silica Gel)	460	60	mg/Kg	M EPA 8015	08/02/2006
1-Chlorooctadecane (Silica Gel Surr)	70.4		% Recovery	M EPA 8015	08/02/2006

Approved By:

Joel Kiff



Report Number : 51299

Date : 08/03/2006

Project Name : **Beaver Lumber Soil Stockpile**

Project Number : **NC-1**

Sample : **S1-10-L**

Matrix : Liquid

Lab Number : 51299-10

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	08/02/2006
Octacosane (Diesel Surrogate)	99.2		% Recovery	M EPA 8015	08/02/2006

Sample : **S1-15-L**

Matrix : Liquid

Lab Number : 51299-11

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	08/02/2006
Octacosane (Diesel Surrogate)	99.2		% Recovery	M EPA 8015	08/02/2006

Sample : **S1-38-L**

Matrix : Liquid

Lab Number : 51299-12

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	08/02/2006
Octacosane (Diesel Surrogate)	98.4		% Recovery	M EPA 8015	08/02/2006

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800





Report Number : 51299

Date : 08/03/2006

Project Name : **Beaver Lumber Soil Stockpile**

Project Number : **NC-1**

Sample : **S1-42-L**

Matrix : Liquid

Lab Number : 51299-13

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	08/02/2006
Octacosane (Diesel Surrogate)	103		% Recovery	M EPA 8015	08/02/2006

Sample : **S2-5-L**

Matrix : Liquid

Lab Number : 51299-14

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	08/03/2006
Octacosane (Diesel Surrogate)	101		% Recovery	M EPA 8015	08/03/2006

Sample : **S2-14-L**

Matrix : Liquid

Lab Number : 51299-15

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	08/03/2006
Octacosane (Diesel Surrogate)	102		% Recovery	M EPA 8015	08/03/2006

Approved By:

Jcel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 51299

Date : 08/03/2006

Project Name : **Beaver Lumber Soil Stockpile**

Project Number : **NC-1**

Sample : **S2-20-L**

Matrix : Liquid

Lab Number : 51299-16

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	08/03/2006
Octacosane (Diesel Surrogate)	105		% Recovery	M EPA 8015	08/03/2006

Sample : **S3-3-L**

Matrix : Liquid

Lab Number : 51299-17

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (w/ Silica Gel)	120	100	ug/L	M EPA 8015	08/03/2006
Octacosane (Diesel Surrogate)	83.4		% Recovery	M EPA 8015	08/03/2006

Sample : **S3-8-L**

Matrix : Liquid

Lab Number : 51299-18

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	08/03/2006
Octacosane (Diesel Surrogate)	95.0		% Recovery	M EPA 8015	08/03/2006

Approved By:

Joel Kiff





Report Number : 51299

Date : 08/03/2006

Project Name : **Beaver Lumber Soil Stockpile**

Project Number : **NC-1**

Sample : **Extraction Blank**

Matrix : Liquid

Lab Number : 51299-19

Sample Date :07/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	08/03/2006
Octacosane (Diesel Surrogate)	88.4		% Recovery	M EPA 8015	08/03/2006

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 51299

Date : 08/03/2006

**QC Report : Method Blank Data**

Project Name : **Beaver Lumber Soil Stockpile**

Project Number : **NC-1**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	08/01/2006
1-Chlorooctadecane (Silica Gel Surr)	98.0		%	M EPA 8015	08/01/2006
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	08/02/2006
1-Chlorooctadecane (Silica Gel Surr)	97.7		%	M EPA 8015	08/02/2006
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	08/02/2006
Octacosane (Diesel Surrogate)	104		%	M EPA 8015	08/02/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
-----------	----------------	------------------------	-------	-----------------	---------------

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:  Joel Kiff



Report Number : 51299

Date : 08/03/2006

**QC Report : Matrix Spike/ Matrix Spike Duplicate**

Project Name : **Beaver Lumber Soil**

Project Number : **NC-1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH as Diesel	51318-79	2.9	20.0	20.0	17.4	18.8	mg/Kg	M EPA 8015	8/1/06	75.8	82.2	8.07	60-140	25
TPH as Diesel	51318-35	3.2	20.0	20.0	21.8	25.6	mg/Kg	M EPA 8015	8/2/06	93.8	110	16.0	60-140	25
TPH as Diesel	Blank	<50	1000	1000	996	967	ug/L	M EPA 8015	8/2/06	99.6	96.7	3.02	70-130	25

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:  \_\_\_\_\_  
Joel Kiff

Report Number : 51299

Date : 08/03/2006

**QC Report : Laboratory Control Sample (LCS)**

Project Name : **Beaver Lumber Soil**

Project Number : **NC-1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
TPH as Diesel	20.0	mg/Kg	M EPA 8015	8/1/06	95.4	70-130
TPH as Diesel	20.0	mg/Kg	M EPA 8015	8/2/06	92.6	70-130

KIFF ANALYTICAL, LLC

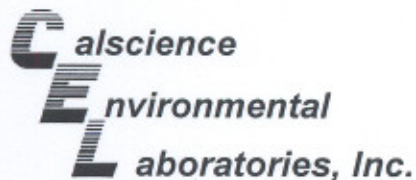
2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:

Joel Kiff







August 03, 2006

Joel Kiff  
Kiff Analytical  
2795 2nd Street, Suite 300  
Davis, CA 95616-6593

Subject: **Calscience Work Order No.: 06-07-1420**  
Client Reference: **Beaver Lumber Soil Stockpile**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 7/28/2006 and analyzed in accordance with the attached chain-of-custody.

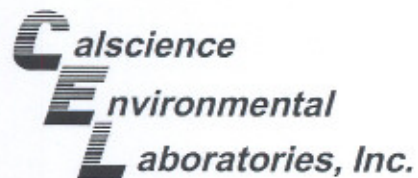
Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Nowak".

Calscience Environmental  
Laboratories, Inc.  
Stephen Nowak  
Project Manager



The samples contained within this shipment and attached chain of custody were extracted in accordance with the California Code of Regulations Title 22, Section 11.5 using DI water. The extracts were then returned to Kiff Analytical.

A handwritten signature in black ink, appearing to be "M. Kiff", located at the bottom left of the page.





2795 Second Street, Suite 300  
Davis, CA 95616  
Lab: 530.297.4800  
Fax: 530.297.4808

Cal Science Environmental  
7440 Lincoln Way  
Garden Grove, CA 92841  
714-895-5494

Lab No.

1420

Page 1 of 1

Project Contact (Hardcopy or PDF to):

Christie Dumas

Company/Address:

Kiff Analytical, LLC

Phone No.:

FAX No.:

Project Number:

NC-1

P.O. No.:

51299

Project Name:

Beaver Lumber Soil Stockpile

Project Address:

EDF Report?

\_\_\_ Yes \_\_\_X No

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Global ID:

EDF Deliverable to (Email Address):

E-mail address:

inbox@kiffanalytical.com

Chain-of-Custody Record and Analysis Request

Analysis Request

Date due:

August 3, 2006

For Lab Use Only

Sample Designation

Date

Time

Glass Jar

Poly

Sleeve

Amber

Tedlar

Hcl

HNO3

Na2S2O3

NONE

ICE

WATER

SOIL

Air

WET by DI Extraction  
(extraction only)

S1-10-L

7/26/06

13:10

1

1

X

X

S1-15-L

7/26/06

13:25

1

1

X

X

S1-38-L

7/26/06

13:50

1

1

X

X

S1-42-L

7/26/06

14:05

1

1

X

X

S2-5-L

7/26/06

14:15

1

1

X

X

S2-14-L

7/26/06

14:30

1

1

X

X

S2-20-L

7/26/06

14:40

1

1

X

X

S3-3-L

7/26/06

14:55

1

1

X

X

S3-8-L

7/26/06

15:20

1

1

X

X

Relinquished by:

DW TG - KIFF Analytical

Date

07/26/06

Time

1900

Received by:

Date

Time

Received by:

Relinquished by:

Date

7/26/06

Time

0900

Received by Laboratory:

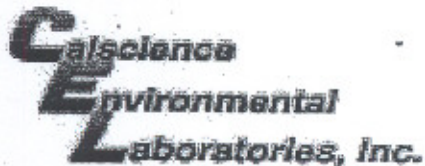
[Signature]

Remarks:

Perform the extraction only, no analysis required. Please send 4 VOAs of each extract back to Kiff.

Bill to:

Accounts Payable



WORK ORDER #: 06 - 07 - 1420

Cooler 1 of 1

## SAMPLE RECEIPT FORM

CLIENT: KihrDATE: 7/28/06

## TEMPERATURE - SAMPLES RECEIVED BY:

## CALSCIENCE COURIER:

- ☐ Chilled, cooler with temperature blank provided.  
☐ Chilled, cooler without temperature blank.  
☐ Chilled and placed in cooler with wet ice.  
☐ Ambient and placed in cooler with wet ice.  
☐ Ambient temperature.  
☐ °C Temperature blank.

## LABORATORY (Other than Calscience Courier):

- 5.0 °C Temperature blank.  
☐ °C IR thermometer.  
☐ Ambient temperature.

Initial: JP

## CUSTODY SEAL INTACT:

Sample(s): \_\_\_\_\_ Cooler: ☒ No (Not Intact): \_\_\_\_\_ Not Applicable (N/A): \_\_\_\_\_Initial: JP

## SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sampler's name indicated on COC.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with custody papers.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct containers and volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on sample label(s).....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VOA vial(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Initial: JP

## COMMENTS:

---



---



---



---



---



---



Project Contact (Hardcopy or PDF To): Scott Kernman

Company / Address: Blue Rock Env. Eureka

Phone #: 707-441-1934 Fax #: 707-441-1949

Project #: NC-1 P.O. #:

Project Name: Beaver Lumber Soil Stockpile

Project Address: Airport Grange Ave. McKinleyville, CA

California EDF Report? ☐ Yes ☒ No

Sampling Company Log Code:

Global ID:

EDF Deliverable To (Email Address): Scott@bluerockenv.com

Sampler Signature: [Signature]

## Chain-of-Custody Record and Analysis Request

Project Address: Airport Grange Ave. McKinleyville, CA		Sampling		Container				Preservative				Matrix		MTBE (EPA 8260B) per		MTBE (EPA 8260B) @ 0.0		BTEX (EPA 8260B)		TPH Gas (EPA 8260B)		5 Oxygenates (EPA 8260B)		7 Oxygenates (EPA 8260B)		Lead Scav. (1,2 DCA & 1		Volatile Halocarbons (E		Volatile Organics Full Li		Volatile Organics (EPA 1		TPH as Diesel (EPA 801		TPH as Motor Oil (EPA 8010)		Total Lead (EPA 8010)		W.E.T. Lead (STLC)		WET/DI		TPHm w/SL		Extract		48 hr		For																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Sample Designation	Date	Time	40 ml VOA	Sleeve	Poly	Glass	Tedlar	HCl	HNO <sub>3</sub>	None		Water	Soil	Air																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

Relinquished by: [Signature] Date: 7/26/06 Time:  Received by: Fed Ex

Relinquished by:  Date:  Time:  Received by:

Relinquished by:  Date: 8/2/06 Time: 1040 Received by Laboratory: [Signature] Kiff Analytical

Remarks: Please run TPHmo's (soil + Extract)  
on Same GC  
thanks SC

Bill to:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
5.2	FMH	8/2/06	1029	IR5	(Yes) No





2795 Second Street, Suite 300  
Davis, CA 95616  
Lab: 530.297.4800  
Fax: 530.297.4808

Cal Science Environmental  
7440 Lincoln Way  
Garden Grove, CA 92841  
714-895-5494

Lab No.



Page 1 of 1

Project Contact (Hardcopy or PDF to):

Christie Dumas

EDF Report? ☐ Yes ☒ No

### Chain-of-Custody Record and Analysis Request

Company/Address:

Kiff Analytical, LLC

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Phone No.:

FAX No.:

Global ID:

Project Number:

NC-1

P.O. No.:

51299

EDF Deliverable to (Email Address):

Project Name:

Beaver Lumber Soil Stockpile

E-mail address:

inbox@kiffanalytical.com

Project Address:

Sampling

Container

Preservative

Matrix

Sample Designation

Date

Time

Glass Jar

Poly

Sleeve

Amber

Tedlar

Hd

HNO3

Na2S2O3

NONE

ICE

WATER

SOIL

Air

WET by DI Extraction  
(extraction only)

Analysis Request

Date due:

August 3, 2006

For Lab Use Only

S1-10-L	7/26/06	13:10	1																X	1	-10
S1-15-L	7/26/06	13:25	1																X	2	-11
S1-38-L	7/26/06	13:50	1																X	3	-12
S1-42-L	7/26/06	14:05	1																X	4	-13
S2-5-L	7/26/06	14:15	1																X	5	-14
S2-14-L	7/26/06	14:30	1																X	6	-15
S2-20-L	7/26/06	14:40	1																X	7	-16
S3-3-L	7/26/06	14:55	1																X	8	-17
S3-8-L	7/26/06	15:20	1																X	9	-18

SAMPLE RECEIPT  
Temp 20 24 Therm ID# 1RS  
Initial PMA Date 8/3/06  
Time 08:00 Coolant present: Yes/No

Relinquished by:

*DW TG - KIFF Analytical*

Date

7/26/06

Time

1900

Received by:

Relinquished by:

Date

Time

Received by:

Relinquished by:

Date

7/26/06

Time

0900

Received by Laboratory:

*M. Davis*

Remarks: Perform the extraction only, no analysis required. Please send 4 VOAs of each extract back to Kiff.

Bill to: Accounts Payable

Relinquished By:

*M. Davis*

8/1/06 1600

080201 0905

*Hall* Kiff Analytical